

THE STANFORD EXPEDITION TO BRAZIL, 1911.

J. C. BRANNER, *Director*.

NEUROPTEROID INSECTS FROM BRAZIL.

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Mr. Mann turned over to me a small but very interesting collection for study; some of them were in alcohol, and these cannot always be placed with certainty, so that a few caddice flies remain unnamed.

Several of the species show a relationship with the fauna of western Argentina; but there are hardly enough species for generalizations in this regard.

PSOCIDÆ.

Thrysophorus speciosus Busmeister.

Several examples of this striking species from Porto Velho, Brazil (Mann coll.) known from many parts of South America.

Ischnopteryx cincta Enderlein.

One specimen from Porto Velho, Amazonas, Brazil. Previously known from the Amazon Region.

Psocus albstigmus sp. nov.

Dark brown; antennæ brown on the extreme base, first long joint mostly yellow, its tip and rest of the antennæ nearly black; legs pale yellowish brown; abdomen blackish near tip, very pale yellow on basal part of venter. Wings dark brown, a broad whitish band across near base, and the basal half of the stigma white, rest of stigma nearly black; a pale dot on the forking of the radial sector just behind the stigma, one on the end of the anal vein, and the lower edge of the discal cell hyaline white; veins blackish; hind wings gray, veins darker. Antennæ sparsely hairy, the hairs about twice as long as width of a joint; head with short hairs. Discal cell nearly twice as long as broad at base, base one-half broader than tip, outer side barely concave; stigma nearly angulate behind, the outer side long and sloping. Length 2.7 mm.

From Madeira Mamoré River, Matto Grosso, Brazil (Mann coll.).

Notiopsocus gen. nov.

Related to *Peripsocus* and *Ectopsocus*. Tarsi two-jointed, in fore legs the joints subequal, in the hind legs the basal joint twice as long as the apical joint. Head broad, eyes rather small, ocelli distinct; legs moderately slender. Fore wing with long stigma; median vein near its tip with but one branch, and in some cases this is faint or absent; cubitus simple, not quite reaching the margin; in hind wing the median and radius united for some distance. Type, *N. simplex* sp. nov.

Notiopsocus simplex sp. nov.

Pale yellowish, head and thoracic notum brownish, eyes black, ocelli on black spot; legs wholly pale; wings hyaline; stigma grey, nearly four times as long as broad, with three rows of bristles. Wings hardly reach to tip of abdomen, dorsum of abdomen very soft, venter more chitinous and brown, and two apical rings also more chitinous, the last segment bilobed at tip, and sparsely hairy. Length 1.7 mm.

From Manaus, Amazonas, Brazil (Mann coll.).

EPHEMERIDÆ.*Campsurus dorsalis* Burmeister.

A number of specimens of a large species which I identify as this species; I figure the male genitalia; they are similar to those of *C. albifilum* Walk., and perhaps that species is a synonym of *C. dorsalis*. From Camp 41, and 39, Madeira River, Brazil. Described from Brazil. I suspect that *C. pictetii* Kirby is the same species.

Campsurus latipennis Walker.

A few specimens of a small species; I figure the male genitalia which agrees fairly well with the figure of Eaton, the process near base of the long appendage is very slender, the size and marks agree with Eaton's description.

From Camp 41, Madeira River, Brazil. Described from Brazil.

Spaniophelbia assimilis sp. nov.

Head and thorax dark brown; abdomen and legs paler brown; setæ whitish, the basal joint brown, the next short oblique joint almost black; the setæ furnished with many short spine-like hairs, and few very long fine hairs, mostly on the inner side, wings hyaline, veins dark, three radial cross-veins, two medial ones, behind the cubitus is a weak sinuous vein that is connected to cubitus by a cross-vein; by this character it is related to *S. anceps* Eaton, but that species has more cross-veins.

Differs from *S. traili* Eaton in not having the cubitus forked, and unmarked wing. Expanse 16 mm.

From Camp 41, Rio Madeira River, Brazil (Mann.)

Tricorythus australis sp. nov.

Pale yellowish, thoracic notum brown, vertex with a black crescent-shaped mark each side near the eye; pronotum and pleura with some faint blackish spots and sometimes two submedian dark streaks on the mesonotum; abdominal segments blackish on the sides, sometimes all across on the hind margin, the last few segments more broadly marked than the others; legs long and slender, wholly pale; wings moderately broad, subhyaline, subcosta and radius darkened, but few cross-veins and these mostly before the middle of the wing. Setæ three, the laterals rather larger than the median, especially in male. Expanse 8 mm.

From Camp 41, Rio Madeira, Brazil (Mann.)

Bætis oldendorffi Weyenbergh.

Three specimens agree with the figure of the fore wing given by Weyenbergh, but that author evidently overlooked the hind wings which are very slender and inconspicuous.

From Camp 41, Rio Madeira River, Brazil (Mann coll.).

PERLIDÆ.

Neoperla debilis Pictet.

One from Madeira Mamoré River, Matto Grosso, Brazil (Mann). Described from Brazil.

Neoperla posticata sp. nov.

Head yellow, with black mark extending forward from between the ocelli, and then bending at right angles to the eyes; antennæ dark; pronotum dark brown, with a broad pale median stripe, widened in front; thorax and abdomen pale yellow; setæ dark brown except the basal joint which is yellow; legs blackish, but basal half of fore and middle femora, basal two-thirds of hind femora, and a broad band beyond middle on hind tibiæ, bright yellowish; wings a uniform brown, except the yellowish costal margin. Ocelli about two diameters apart and but little farther from the eyes, lateral bosses close to the ocelli, and about their diameter from the eyes; pronotum much broader than long, slightly narrowed behind, sides strongly rugose; hind tibia longer than hind femur, very broad. Fore wings with two branches to the radial sector; three median and three cubital cross-veins, alternat-

ing. In hind wings also two branches of radial sector, and four cubital cross-veins; in both wings two cross-veins beyond end of the subcosta. Expanse 19 mm.

From Rio Madeira, Abuná, Brazil (Mann coll.).

NEUROPTERA.

SIALIDÆ.

Corydalus nubila Erichson.

Two specimens of this species, of small size, from Porto Velho, Rio Madeira River, Brazil (Mann and Baker).

Common in parts of Northern South America.

CHRYSOPIDÆ.

Chrysopa lanata Banks.

Several from Natal, and Pirangi, Brazil.

Previously known from Argentina.

Chrysopa hybrida Burmeister.

One from Manaus, Amazonas, Brazil (Mann coll.).

Described from Brazil.

Chrysopa sp.

One from Marangape Mts. Ceará, Brazil (Mann coll.). Appears to be new, but is not in good condition; the antennæ beyond base are black, the basal joint with stripe above, pronotum red on side margins, most of cross-veins and the gradate veins black, the inner gradate series much nearer to the outer than to the radial sector.

MYRMELEONIDÆ.

Dimarella efferus Walker.

Three specimens from Abuná, Rio Madeira, Brazil (Mann coll.).

Described from Brazil.

TRICHOPTERA.

ODONTOCERIDÆ.

Marilia fasciculata sp. nov.

♂—Spurs, 2-4-2. Dark brown; eyes nearly meeting above, basal joint of antennæ large, slightly swollen in the middle, antennæ whitish, but the joints

broadly banded with black; palpi nearly black, tips of the joints whitish; legs pale brownish, tarsal joints marked with dark brown. Abdomen yellowish brown, the penultimate ventral segment with a black spot; fore-wings nearly uniform brownish, but the stigmal region darker, and outer margin rather darker; hind wings grey with darker veins; at anal angle is a spreading fascicle of long hairs, nearly as long as width of fore wings. Fore wings slender, outer margin nearly truncate, discal cell longer than pedicel, the first apical not so far back on the cell as in *M. minor*; the median vein does not reach outer margin; fork five does not reach as far back as fork one; the hind wings are broad, the anal portion twice as broad as the other part; venation similar to *M. minor*. The male appendages are long, similar to *M. minor*, but the tip enlarged, and a pair of upcurved lateral pieces within the larger appendages. Expanse 19 mm.

From Madeira Mamoré River, Matto Grosso, Brazil (Mann coll.).

MACRONEMATIDÆ.

Leptonema crassum Ulmer.

Camp 43, Madeira Mamoré River, Brazil (Mann and Baker coll.) and Manaos, Amazonas, Brazil (Mann coll.). Known from Brazil, Ecuador, Colombia, and Central America.

Leptonema externum sp. nov.

Pale yellowish white, a dark cloud near the stigma, two black dots near costal base of fore wings and a black dot on outer base of basal joint of each antenna, rest of antennæ faintly annulate; vertex tuberculate near base of antennæ, clothed with fine short hair; third joint of maxillary palpi rather more than one-half the length of the second, much swollen below, fourth joint about one-half as long as third. Wings of moderate length, median cell very broad, fifth apical some distance back on the median cell, discal rather longer than broad. Expanse 25 to 30 mm.

From Camp 41, 360 Kilometers from Porto Velho, Brazil (Mann coll.).

LEPTOCERIDÆ.

Leptocella jenseni Ulmer.

One from Camp 43 Madeira Mamoré River, Brazil (Mann coll.). Although much rubbed it seems to agree with cotypes of this species from Argentine.

Æcetina sp.

One specimen, with the anastomosis strongly marked; not *Æ. excisa*, for fork one is quite long pedicellate.

From Manaos, Amazonas, Brazil (Mann coll.).

HYDROPSYCHIDÆ.

Rhyacophylax lobatus Ulmer.

Many specimens from Manaos, Amazonas; Camp 41, 360 Kilometers from Porto Velho; and Madeira Mamoré River, Matto Grosso, Brazil. (Mann coll.). Previously known from Argentine.

Ecnomodes buchwaldi Ulmer.

Four from Manaos, Amazonas; and Camp 43, Madeira Mamoré River, Matto Grosso, Brazil (Mann coll.). Previously known from Peru; a very distinct and handsome little species.

Cynellus gen. nov.

Differs from *Cyrnus* in having median cell of fore-wings open, and the subcosta runs into radius, or connected obliquely thereto. Type *C. minimus* Bks.

Includes also *Cyrnus risi* Ulmer.

Cynellus minimus sp. nov.

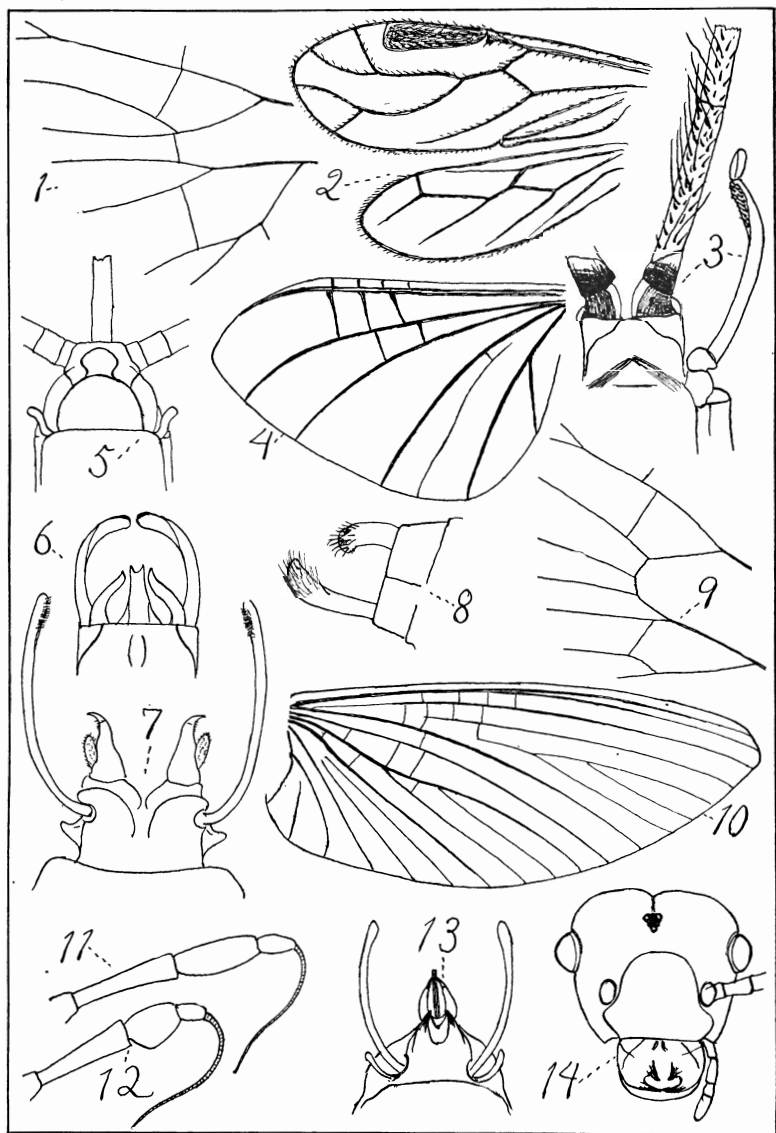
Agrees with *C. risi* in venation, length of cells and forks of both wings. However the wings are of a uniform brown, not darker around outer edge; the lower appendages of the male are not as heavy as in *C. risi* when seen from the side, and the insect is smaller (fore wings hardly 4 mm. long); only apical half of antennæ strongly serrate; the wings are rubbed, but show some scattered golden hairs.

From Camp 41, 360 Kilometers from Porto Velho, Brazil, and Madeira Mamoré River, Matto Grosso, Brazil (Mann coll.).

APPENDIX.

As an appendix I give a table of the species of *Leptonema* known to me; two others are described, one, *L. speciosum* Burm. from Brazil has dark marks on the wings but not near as heavily marked as *L. cinctum*, the other from Southern Brazil, *L. sparsum* Ulmer, has a peculiarity in the venation. I describe one new species from Guatemala, and have yet one other species which appears to be new.

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|-----------------------------------------------------------------|------------------|
| 1. Wings with dark streaks all over, leaving hyaline spots..... | <i>cinctum</i> . |
| Wings nearly uniform, or darker only near the stigma..... | 2 |
| 2. Two or three black dots near costal base of fore wings..... | 3 |
| No such dots..... | 5 |



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3. A black spot at base of outer side of each antenna; wings whitish....*externum*.
No such spot at base of antenna.....4
4. Wings brownish, often darker on costal part near stigma, third palpal joint not twice as long as fourth.....*crassum*.
Wings whitish; palpi more slender, the third joint about twice as long as the fourth.....*columbianum*.
5. Wings white or greenish white.....*albovirens*.
Wings more or less brownish.....6
6. Fifth apical cell of fore wing reaches well on the median cell.....8
Fifth apical cell reaches only to the median cell.....7
7. Discal cell long; dots distinct and black.....*stigmatosum*.
Discal cell hardly longer than broad, dots obsolete.....*agraphum*.
8. Discal cell hardly longer than broad, outer side very oblique.....*pallidum*.
Discal cell but little longer than broad, outer side vertical; second palpal joint not one and a half times as long as third.....*guatemalium*.
Discal cell nearly twice as long as broad; wings long and slender; second palpal joint more than one and a half times as long as the third.....*furcatum*.

Leptonema guatemalium sp. nov.

Pale yellowish brown, about as in *L. pallidum*; antennæ plainly annulate with brown; vertex flat, with only short hairs; maxillary palpi slender, the second joint hardly one and a half times as long as the third, which is longer than usual, but not much swollen, the fourth not one-half the length of the third. Wings of moderate length, pale yellowish brown, the costal margin not darker, discal cell longer than in *L. pallidum* and the outer margin vertical, fifth apical a short distance on median cell, median cell not very broad. Expanse 30 mm.

From Olas de Moka, Dept. Solola, Guatemala, Sept. (Englehart coll.).

EXPLANATION OF PLATE.

- Figure 1. *Leptonema externum* wing cells.
 2. *Notiopsocus simplex* wings.
 3. *Spaniophlebia assimilis*, genitalia.
 4. *Spaniophlebia assimilis*, fore wing.
 5. *Tricorythus australis*, genitalia.
 6. *Marilia fasciculata*, genitalia.
 7. *Campsurus dorsalis*, genitalia.
 8. *Cyrnellus minimus*, genitalia.
 9. *Leptonema guatemalium*, wing cells.
 10. *Tricorythus australis*, genitalia.
 11. *Leptonema guatemalium*, palpus.
 12. *Leptonema externum*, palpus.
 13. *Campsurus latipennis*, genitalia.
 14. *Notiopsocus simplex*, head.